

A Review of Pelagic Bird Records in *Sea Swallow* from the off-shore waters of Kerala

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An authentic checklist of Birds of Kerala based on sufficiently substantiated sightings was published in *Malabar Trogan* (Vol 7(3):2-13). This was based on the book, *Birds of Kerala - Status and Distribution* (Sashikumar *et. al.* 2011) which was published a year later. All species which were recorded post 1975 which sufficiently meet a well-specified criteria (see Sashikumar *et. al.* 2011) was included in the book as a “Main List” and this was the basis for inclusion in the checklist published in *Malabar Trogan*. As elaborated by the authors, all published and unpublished records which were accessible to them were considered during the compilation. However, it is noteworthy that records of pelagic species were not sufficiently scrutinised and one of the main reason being the inaccessibility of the journal *Sea Swallow*, a publication by Royal Naval Birdwatching Society (RNBWS), which carried most of the sightings from off-shore waters of India. Recently, it has been noticed that this large database is available online at their homepage (<http://www.rnbws.org.uk>) and this paper analyses records in this database which are made from the offshore waters of Kerala.

Definition of off-shore limits

Sashikumar *et. al.* 2011 does not define what have been the limits of 'political' Kerala in off-shore waters for evaluating bird records and creating bird checklist. This is also true for all almost all regional publications till date and hence the ambiguity of including off-shore records in these checklists. An attempt is made to define this limit for Kerala before any further analysis of records from RNBWS database.

International bird-checklists, including BirdLife International (www.birdlife.org) and *SurfBirds* (www.surfbirds.com), follow 200 nautical miles (NM) from the nearest land (including islands) as the limit for including birds in the checklists. Various options available and the rationale for choosing 200 NM are also understood by the international community (Jaramillo, 2003). However, in case the limits of two political entities overlap, the median distance between the two entities is chosen as the off-shore limits. In this context, we should realise that both Kerala and Lakshadweep are different entities for compiling bird records and hence we would need to draw a median between the nearest points in land to create this limit.

Androth island of Lakshadweep is 116 NM (210 km) from Ezhimala, which is the nearest point in the Kerala coast. Kalpeni island is 140 NM (257 km) from Ponnani. Minicoy island is much further away from the coast and the nearest point, Alappuzha, is already 200 NM away. Kalpeni Island is no further than 200 NM from the whole of southern Kerala up to Paravoor and the distance reaches 230 NM at the southern coastal tip of Kerala - almost equidistant from the nearest island of Maldives archipelago. At the northern tip, Androth Island is 160 NM from the northern coastal tip of Kerala. Near Kodungallor, both islands are equidistant and are about 150 NM away. Hence, the islands of Androth and Kalpeni dictate the off-shore water limits of Kerala – 80 NM (~150 km) at the northern tip, reducing to just 55 NM (~100 km) at Ezhimala, increasing to 75 NM (~140 km) around Kodungallor and further to 11 5NM (~210 km) at the southern tip of Kerala. If the coast of Kerala can be considered a straight line running north-west to south-east; the off-shore boundary of Kerala would be two parabolic arcs; with foci as Androth and Kalpeni; intersecting each other at a point 75 NM (140 km) west of Kodungallor.

It may be of interest that some publications consider anything within 50 NM (~90 km) off the coast as 'off-shore' and everything beyond as pelagic (Bailey 1968). This might be an ecological definition but may not be suited for creating bird checklists and maps for political entities. We analyse all records of pelagic birds from RNBWS database which are within these limits.

Shearwaters & Petrels

About 28 **Flesh-footed / Pale-footed Shearwaters** (*Puffinus carneipes*) were recorded from a location (10.1°N, 75.6°E) 60 km W of Paravoor, Kochi on August 1987. Six birds were “seen closely” from a location (7.87°N, 75.47°E) from about 160 km SW of Kollam in August 1962. These two records match our current understanding that this species would be seen in Kerala coast from May to September. However, about 20 possible **Jouanin's Petrels** (*Bulweria fallax*) reported in July 1991 (“...thought to be this species (or Bulwer's Petrel?] off Cochin vd Berg (1991) report this species off India...”) from a location (10.5°N, 75.5°E) 50km W of Chavakkad could also have been the former species. It has been repeatedly asserted that Jouanin's Petrels in Arabian Sea were previously misidentified as Bulwer's Petrel (*Bulweria bulwerii*) or Wedge-tailed Shearwater (*Puffinus pacificus*) before it was categorised as a distinct species.

However, Bailey (1963) found separation with Bulwer's Petrel to be easy in terms of size while Wedge-tailed Shearwater was still considered tricky. Our current knowledge indicates that Flesh-footed Shearwater and Wedge-tailed Shearwater are extremely troublesome to id at sea and hence these Petrels could have been a flock of Flesh-footed Shearwater which is abundant in our off-shore waters during summer.

Incidentally, there is a report of a single (?) **Wedge-tailed Shearwater** from a location (9.75°N, 75.75°E) 55 km W of Chertala in August 1972 – validity of this report, as against the more common Flesh-footed Shearwater, is also not certain. Further south, two Wedge-tailed Shearwaters were reported in July 1973 and a group reported in June 1977 from locations (7.55°N, 75.53°E & 7.5°N, 75.5°E) roughly 160 km SW of Thiruvananthapuram coast – these two reports from same locality during similar time of the year should substantiate each other.

An **Audubon's Shearwater** (*Puffinus lherminieri*) was reported at a location (12.5°N, 75.5°E) about 50 km W of Kasargod (“off Mangalore” as reported by observer) in April 1969. It is worthwhile to note that Persian Shearwater (*Puffinus persicus*) has historically been lumped with Audubon's and this is also the time period (spring) when it is common in our waters. Hence, this sighting most likely refers to Persian instead of Audubon's Shearwater. It might be of interest to note that Karnataka checklist (bngbirds/message/18332) also includes an untraced Audubon's Shearwater and most likely could have been this record indicated as “off Mangalore” by the observer.

To summarise, apart from the Flesh-footed Shearwater sightings off Paravoor coast and Wedge-tailed Shearwater further SW of Thiruvananthapuram coast, correct identity of other records are open and hence should be treated with caution. Flesh-footed Shearwater was already treated in the checklist while Wedge-tailed Shearwater is a recent entrant to Kerala checklist after a well-documented record in May 2011 (www.orientalbirdimages.org). Among the three reported Wedge-tailed Shearwaters, two are pre-1975 reports and with just one sighting post-1975 – the species would not have satisfied the criteria for inclusion and hence would not have figured in the checklist.

Storm Petrels

There are six sightings of **Wilson's Storm Petrel** (*Oceanites oceanicus*), and this corroborates well with the knowledge that there is a marked abundance in some years for this species from the coasts of Kerala. This species spend the northern summer in Arabian Sea and sometimes large numbers migrate south during Sept-Nov (Philips 1955). Sightings are from locations close to the coast like about 25 km W (9.97°N, 76°E) of Kochi of a single bird in September 1962, a large count of 450 numbers just 10 km W (8.75°N, 76.5°E) of Paravur, Kollam in July 1967, about 8 birds SW (8°N, 77.25°E) of Nagercoil in October 1969, possibly one bird in August 1972 55km W (9.2°N, 76.1°E) of Cherthala coast in Alappuzha, about 50 birds along with dolphins, sea-snakes and crabs at a spot (9.2°N, 76.1°E) 40 km W of Kayankulam in August 1987 and another bird in the same year in October 100 km SW (7.8°N, 76.2°E) of Thiruvananthapuram coast – there has also been a sighting from the land in August 1987 from the coast of Thiruvananthapuram (Sashikumar *et. al.* 2011) indicating perhaps that this year was particularly good for this species. Among these, at least four of them (Kochi, Paravur, Cherthala & Kayankulam) can be clearly classified as belonging to off-shore waters of Kerala and these observations boosts our understanding of this species from Kerala. Wilson's Storm Petrel moved into the main checklist only recently in May 2011 after a well-documented record from Malabar (www.orientalbirdimages.org). Had the previous observations been considered, the Kayankulam record of

1987 (the only record post-1975 from Kerala off-shore) would have substantiated the existing sighting from land in the same year and this species would have got classified into the main checklist of Kerala (Sashikumar *et. al.* 2010).

Apart from this seemingly abundant species, a **White-faced Storm Petrel** (*Pelagodroma marina*) was collected live on board at a location (10.5°N, 75°E) roughly 100 km W-SW of Ponnani (observer indicates NE of Kochi – must have meant NW) in June 1960. There have been no previous sightings of this species from offshore waters of Kerala but it is indicated as a widely distributed species in the Arabian Sea during northern summer. Identity of this species must have been ascertained correctly as a live specimen was taken and it is an easy species to tell from other storm-petrels. However, we are unable to trace this specimen to verify the authenticity of this record. This species cannot qualify into the main checklist as this would amount to just one sight record and also pre-1975. In any case, the presence of this interesting species within such a distance from the coast is interesting for further searches.

Similarly, a **White-bellied Storm Petrel** (*Fregetta grallaria*) was recorded from a location (12.35°N, 74.08°E) 100 km W of Kasaragod (W of Mangalore as described by the observer) in July 1967 with a description as follows “*Primaries, leading edge of wings and tail dark brown, not as dark as Wilson's. Rest of dark part is grey brown; vague white rumps; white belly. Under-wing is white with dark tip and broad dark edges. Gliding and hopping across water with outspread wings, frequently kicking off from surface with a noticeable splash*”. This description could have matched either White-bellied Storm Petrel or Black-bellied Storm Petrel (*Fregetta tropica*) and most reference guides consider records of White-bellied Storm Petrel in Arabian Sea with suspicion (Rasmussen & Anderton 2005). Hence, it is safe to consider this record as **Black-bellied/White-bellied Storm Petrel**.

Skuas & Jaegers

There are only two records of **Parasitic Jaegers / Arctic Skua** (*Stercorarius parasiticus*) within off-shore limits of the Kerala coast. About 20 seen at a location (10.7°N, 75.6°E), 30 km W of Ponnani, noted by the observer as “seen in small groups 40 km W Chavakkad (Kerala)” in Feb 1990 is most likely the wintering Skuas, where similar Pomarine Jaegers (*Stercorarius pomarinus*) also mix along. However, that species has not been reported by any observer who contributed to the database. Another single **Parasitic Jaeger** was recorded at a location (9.25°N, 75.5°E) about 100km W from the coast of Harippad, Alappuzha in May 1967 – however the observer indicates as “c.300km W of Calicut”. It is not unusual that a few birds, probably first-winter birds, linger around in tropical seas even in May. Two *Catheracta* Skuas were noted at a location (9.75°N, 75.75°E) about 55 km W of Cherthala in Alappuzha in August 1972. This could have been either **South Polar Skua** (*Catharacta maccormicki*) or **Brown Skua** (*Catharacta antarctica*) which breeds during the southern summer but the sighting does not add much value as the species is not certain.

In summary, the Parasitic Jaeger records from 1967 and 1990 substantiate the current understanding of this species in Kerala coast. This species was included in Kerala checklist only in September 2010 after several well-documented records of Malabar coast (www.orientalbirdimages.org). This species was recorded twice off Kochi off-shore in Feb 2008 but did not make it to the checklist due to lack of sufficient substantiation. The 1990 sighting of 20 birds, if considered, could have allowed entry to this species into the Kerala checklist.

Other pelagic birds

A **Red-billed Tropicbird** (*Phaethon aethereus*) was recorded from 55 km W (9.75°N, 75.75°E) of Cherthala among other pelagics in August 1972. Two birds were recorded from a location (7.55°N, 75.53°E) nearly 160 km SW of Thiruvananthapuram coast in July 1973 along with Wedge-tailed Shearwaters. Though all wind-blown records of this species to Kerala coast has been in winter, this species is known to occur in Arabian Sea during July-August also. A striking species as this, this record can be considered authentic and correctly identified. A **Brown Noddy** (*Anous stolidus*) was recorded on board a ship at a location (10.5°N, 75.5°E) 50 km W of Chavakkad on July 1991. Though it breeds extensively in the islands of Lakshadweep and is sometimes extremely common in Lakshadweep Sea, strangely this species has never been recovered from the coast of Kerala. However, there was a recent sighting in May 2004 by Kanwar B Singh

(keralabirder/message/1376) of many individuals within 30 miles (50 km) of Kochi. This was not considered by *Birds of Kerala – Status and Distribution* since offshore was loosely defined. These two records will automatically qualify this species into the main checklist of Kerala.

Conclusion

Analysis of *Sea Swallow* records indicates the following summary with reference to checklist of birds of Kerala.

- a) One species new to Kerala checklist which satisfies the criteria for inclusion for the main checklist. Species: Brown Noddy
- b) Two species which were included in Kerala checklist post June 2010 (Sashikumar *et. al.* 2010) but independently satisfies the criteria for inclusion based on RNBWS records. Species: Wilson's Storm Petrel, Parasitic Jaeger

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Parasitoids associated with the Mango leaf webber pest, *Orthaga exvinacea* Hampson (Lepidoptera:Pyralidae)

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Mango is a popular fruit among millions of people in the orient, particularly in India, where it is the most common one and is considered to be the choicest of all indigenous fruits. Because of its excellent flavour, attractive fragrance, beautiful shades of colour, delicious taste and healthful value, mango has been recognized as one of the best fruits in the world market.

Mango is known to be attacked by about 492 species of insects in the world level. Of these 188 species have been reported from India (Tandon and Varghese, 1985; Srivastava, 1998). Among the various species of insects affecting mango tree, the Lepidopteran leaf webber pest, *Orthaga exvinacea* Hampson, was originally regarded as a minor pest. However, later, it attained a major pest status (Rao *et al.*, 1973). The infected trees are conspicuous with numerous webbed leaves and dry apical shoots. Such an attack in most cases prevents flower formation and fruit setting (Ayyar, 1940). In the Malabar area of Kerala state, the mango leaf webber infestation is quite serious, destroying mango orchards.

Despite the perceived impact of *Orthaga exvinacea* on mango trees in Malabar area, there is no relevant information in the literature on its natural enemies. The successful management of this pest becomes pertinent so as to improve the quality and increase the quantity of mango production. Surveys conducted in different parts of Kozhikode district on cultivated and wild host plants during 2010-2011 revealed two pupal parasitoids attacking *Orthaga exvinacea*. The Eulophid *Trichospilus pupivora* Ferr. (Hymenoptera:Eulophidae) was the dominant parasitoid of the region followed by the Chalcidid *Brachymeria lasus* Walker(Hymenoptera: Chalcididae).